

Application Serial No. 10/620,912

Patent
Docket No. NET-007 US (7033282001)Amendments to the Claims

Please amend claims 1, 4, 5, 22, 43, 44, and 46, and insert new claims 73-78, as follows.

1. (Currently Amended) A method of supporting voice-band modem-to-modem calls in a wireless communication system, the method comprising:

detecting a call from a first voice-band modem to a second voice-band modem over a wireless voice channel;

establishing a connection with the first voice-band modem in response to the detected modem call;

receiving data from the first voice-band modem over the connection;

demodulating the received data; and

relaying the demodulated data from a near end of the wireless broadband channel to a far end of the wireless broadband channel.

2-3. (Cancelled)

4. (Currently Amended) The method of claim 1 further comprising:

receiving the relayed data at the far end of the wireless broadband channel;

modulating the received data;

establishing a connection with the second voice-band modem; and

transmitting the modulated data to the second voice-band modem via the connection.

5. (Currently Amended) The method of claim 4 wherein establishing connection with the first voice-band modem comprises answering a modem call from the first voice-band modem, and

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establishing the connection with the second voice-band modem comprises placing a modem call to the second voice-band modem.

6. (Original) The method of claim 1 wherein the wireless broadband channel is not used for voice calls.

7. (Previously Presented) The method of claim 1 wherein the wireless broadband channel is packet switched, and the wireless voice channel is circuit switched.

8-13. (Cancelled)

14. (Previously Presented) The method of claim 1 wherein detecting the modem call comprises detecting tones.

15. (Previously Presented) The method of claim 1 wherein one of a subscriber unit and a base station relays the modulated data and another of the subscriber unit and the base station receives the modulated data.

16-21. (Cancelled)

22. (Currently Amended) A wireless communication system comprising:
a wireless voice channel having a near end and a far end;
a wireless broadband channel having the same near end and the same far end as the wireless voice channel;
a first modem linked to the near end of the wireless voice and broadband channel channels;
a second modem linked to the far end of the wireless voice and broadband channels;

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a third modem located at the near end of the wireless voice and broadband channels and configured for, in response to a detection of the a modem call over the wireless voice channel, establishing a connection with the first modem, receiving data from the first modem over the connection, and demodulating the received data; and

a first radio unit located at the near end of the wireless voice and broadband channels and configured for relaying the demodulated data over the wireless broadband channel.

23. (Previously Presented) The system of claim 22 wherein the wireless communication system further comprises:

a second radio unit located at the far end of the wireless voice and broadband channels and configured for receiving the relayed data from the wireless broadband channel;

a fourth modem located at the far end of the wireless voice and broadband channels and configured for modulating the received relayed data, establishing a connection with the second modem, and transmitting the modulated data to the second modem over the connection.

24-25. (Cancelled).

26. (Previously Presented) The system of claim 22 wherein the wireless voice channel is a dedicated wireless voice channel.

27-35. (Cancelled)

36. (Previously Presented) The system of claim 22 further comprising a tone detector configured for detecting the modem call.

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37. (Previously Presented) The system of claim 22 further comprising a subscriber unit and a base station, one of which includes the third modem and the first radio unit, and another of which includes the fourth modem and the second radio unit.

38-42. (Cancelled)

43. (Currently Amended) The method of claim 1 further comprising terminating the modem call over the wireless voice channel prior to establishing the connection between the near end of the wireless broadband channel and the first voice-band modem.

44. (Currently Amended) The method of claim 1 wherein the wireless broadband channel is located between the first voice-band modem and second voice-band modem.

45. (Previously Presented) The method of claim 1 wherein the wireless voice channel is dedicated to the modem call.

46. (Currently Amended) The method of claim 1 wherein the connection is established between the near end of the wireless broadband channel and the first voice-band modem.

47. (Previously Presented) The method of claim 1 wherein the modem call is detected at a near end of the wireless voice channel.

48. (Previously Presented) The method of claim 1 wherein the modem call is detected at a far end of the wireless voice channel.

49. (Previously Presented) The system of claim 23 wherein the third modem establishes a connection with the first modem by answering a modem call from the first modem, and the fourth

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modern establishes a connection with the second modem by placing a modem call to the second modem.

50. (Previously Presented) A method of supporting voice-band modem-to-modem calls in a wireless communication system, the method comprising:

detecting a call from a first modem to a second modem over a wireless voice channel;

determining a data transfer rate of the detected modem call;

comparing the data transfer rate to a bandwidth of the wireless voice channel; and

if the data transfer rate is greater than the bandwidth of the wireless voice channel:

establishing a connection with the first modem;

receiving data from the first modem over the connection;

demodulating the received data; and

relaying the demodulated data from a near end of a wireless broadband channel to a far end of the wireless broadband channel.

51. (Previously Presented) The method of claim 50 further comprising:

comparing the data transfer rate to a threshold rate that is less than the bandwidth of the wireless voice channel; and

if the data transfer rate is between the threshold rate and the bandwidth of the wireless voice channel:

establishing a connection with the first modem;

receiving data from the first modem over the connection;

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demodulating the received data; and
relaying the demodulated data from a near end of the wireless voice channel to a far end of the wireless voice channel.

52. (Previously Presented) The method of claim 51 further comprising maintaining the modem call over the wireless voice channel if the data transfer rate is equal to or less than the threshold rate.

53. (Previously Presented) The method of claim 50 further comprising:
receiving the relayed data at the far end of the wireless broadband channel;
modulating the received data;
establishing a connection with the second modem; and
transmitting the modulated data to the second modem via the connection.

54. (Previously Presented) The method of claim 53 wherein establishing connection with the first modem comprises answering a modem call from the first modem, and establishing the connection with the second modem comprises placing a modem call to the second modem.

55. (Previously Presented) The method of claim 50 wherein the wireless broadband channel is not used for voice calls.

56. (Previously Presented) The method of claim 50 wherein the wireless broadband channel is packet switched, and the wireless voice channel is circuit switched.

57. (Previously Presented) The method of claim 50 wherein detecting the modem call comprises detecting tones.

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58. (Previously Presented) The method of claim 50 wherein one of a subscriber unit and a base station relays the modulated data and another of the subscriber unit and the base station receives the modulated data.

59. (Previously Presented) The method of claim 50 further comprising terminating the modem call over the wireless voice channel prior to establishing the connection between the near end of the wireless broadband channel and the first modem.

60. (Previously Presented) The method of claim 50 wherein the wireless broadband channel is located between the first modem and second modem.

61. (Previously Presented) The method of claim 50 wherein the wireless voice channel is dedicated to the modem call.

62. (Previously Presented) The method of claim 50 wherein the connection is established between the near end of the wireless broadband channel and the first modem.

63. (Previously Presented) The method of claim 50 wherein the modem call is detected at a near end of the wireless voice channel.

64. (Previously Presented) The method of claim 50 wherein the modem call is detected at a far end of the wireless voice channel.

65. (Previously Presented) A wireless communication system comprising:
a wireless voice channel having a near end and a far end;
a wireless broadband channel having the same near end and the same far end as the wireless voice channel;

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a first modem linked to the near end of the wireless voice and broadband channel;
a second modem linked to the far end of the wireless voice and broadband channels;
a processor configured for determining a data transfer rate of a modem call from the first modem to the second modem over the wireless voice channel, and comparing the data transfer rate to a wireless voice channel;
a third modem located at the near end of the wireless voice and broadband channels and configured for establishing a connection with the first modem, receiving data from the first modem over the connection, and demodulating the received data if the data transfer rate is greater than the bandwidth of the wireless voice channel; and
a first radio unit located at the near end of the wireless voice and broadband channels and configured for relaying the demodulated data over the wireless broadband channel if the data transfer rate is greater than the bandwidth of the wireless voice channel.

66. (Previously Presented) The system of claim 65, wherein:

the processor is configured for comparing the data transfer rate to a threshold rate that is less than the bandwidth of the wireless voice channel;
the third modem is configured for establishing a connection between a near end of the wireless voice channel and the first modem, receiving data from the first modem over the connection, and demodulating the received data if the data transfer rate is between the threshold rate and the bandwidth of the wireless voice channel; and

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the first radio unit is configured for relaying the demodulated data from the near end of a wireless voice channel to a far end of the wireless voice channel if the data transfer rate is between the threshold rate and the bandwidth of the wireless voice channel.

67. (Previously Presented) The system of claim 66 further comprising a vocoder for maintaining the modem call over the wireless voice channel if the data transfer rate is equal to or less than the threshold rate.

68. (Previously Presented) The system of claim 67 wherein the wireless communication system further comprises:

a second radio unit located at the far end of the wireless voice and broadband channels and configured for receiving the relayed data from the wireless broadband channel;

a fourth modem located at the far end of the wireless voice and broadband channels and configured for modulating the received relayed data, establishing a connection with the second modem, and transmitting the modulated data to the second modem over the connection.

69. (Previously Presented) The system of claim 65 wherein the wireless voice channel is a dedicated wireless voice channel.

70. (Previously Presented) The system of claim 65 further comprising a tone detector configured for detecting the modem call.

71. (Previously Presented) The system of claim 65 further comprising a subscriber unit and a base station, one of which includes the third modem and the first radio unit, and another of which includes the fourth modem and the second radio unit.

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72. (Previously Presented) The system of claim 66 wherein the third modem establishes a connection with the first modem by answering a modem call from the first modem, and the fourth modem establishes a connection with the second modem by placing a modem call to the second modem.

73. (New) The method of claim 1, wherein the demodulated data is relayed based on a transfer rate of the data.

74. (New) The method of claim 1, wherein the connection comprises a voice-band communication link.

75. (New) A wireless communication system comprising:
a wireless broadband channel having a near end and a far end;
a first voice-band modem linked to the near end of the wireless broadband channel;
a second voice-band modem linked to the far end of the wireless broadband channel;
a third modem located at the near end of the wireless broadband channel and configured for, in response to a detection of a modem call over the wireless broadband channel, establishing a connection with the first voice-band modem, receiving data from the first voice-band modem over the connection, and demodulating the received data; and
a first radio unit located at the near end of the wireless broadband channel and configured for relaying the demodulated data over the wireless broadband channel.

76. (New) The system of claim 75, further comprising:
a second radio unit located at the far end of the wireless broadband channel and configured for receiving the relayed data from the wireless broadband channel;

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a fourth modem located at the far end of the wireless broadband channel and configured for modulating the received relayed data, establishing a connection with the second voice-band modem, and transmitting the modulated data to the second voice-band modem over the connection.

77. (New) The system of claim 76, wherein the third and the fourth modems are voice-band modems.

78. (New) The system of claim 75, further comprising a tone detector configured for detecting the modem call.

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